

Amendments to the Claims

Please cancel claim 2 as set forth below.

Please add claims 9-20 as set forth below.

Please amend claims 3 and 7 as set forth below.

A complete listing of all claims in this application is set forth below. This listing will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Previously presented) An instrument for deploying a bone cement material in a bone cavity, the material being formed from two reactive components which, when mixed, react to form a useable cement, the instrument comprising:

- a. a chamber in which the components of the material can be mixed,
- b. a mixing tool which extends into the chamber, and which can be manipulated from outside the chamber, to cause the components of the material to mix,
- c. an outlet from the chamber through which the mixed material can be discharged from the chamber after it has mixed,
- d. a piston which can be moved through the chamber to apply positive pressure to mixed material within the chamber, to displace the mixed material from the chamber through the outlet into the bone cavity,

e. a sealing component which fits over the bone cavity to seal the cavity around the chamber outlet and to minimise leakage of bone cement that has been injected into the cavity,

f. a sensor for measuring the pressure to which the bone cement is subjected during displacement from the chamber,

in which the sensor is located in the sealing component.

Claim 2 (Canceled)

3. (Currently amended) An instrument as claimed in claim ~~2~~ 1, in which the ~~further pressure~~ sensor is located in ~~or close to~~ the face of the sealing component which faces into the bone cavity.

4. (Previously presented) An instrument as claimed in claim 1, in which the sealing component comprises:

a. a sealing plate which can be fitted over the bone cavity and has a quantity of a resiliently deformable material on its lower face to enable a seal to be created between the plate and the edge of the bone, and

b. a plug which has an injection port extending through it in which the outlet can be received,

the sealing plate having an opening extending through it (i) in which the plug can be received, and (ii) through which a prosthesis which is to be bonded to the bone of the cavity by the bone cement can be inserted into the cavity after injection of the cement and removal of the plug.

5. (Previously presented) An instrument for deploying a bone cement material in a bone cavity, the material being formed from two reactive components which, when mixed, react to form a useable cement, the instrument comprising:

- a. a chamber in which the components of the material can be mixed,
- b. a mixing tool which extends into the chamber, and which can be manipulated from outside the chamber, to cause the components of the material to mix,

- c. an outlet from the chamber through which the mixed material can be discharged from the chamber after it has mixed,

- d. a piston which can be moved through the chamber to apply positive pressure to mixed material within the chamber, to displace the mixed material from the chamber through the outlet into the bone cavity,

- e. a sealing component which fits over the bone cavity to seal the cavity around the chamber outlet and to minimise leakage of bone cement that has been injected into the cavity,

- f. a sensor for measuring the pressure to which the bone cement is subjected during displacement from the chamber,

in which the sealing component comprises:

- A. a sealing plate which can be fitted over the bone cavity and has a quantity of a resiliently deformable material on its lower face to enable a seal to be created between the plate and the edge of the bone, and

B. a plug which has an injection port extending through it in which the outlet can be received,

the sealing plate having an opening extending through it (i) in which the plug which can be received, and (ii) through which a prosthesis which is to be bonded to the bone of the cavity by the bone cement can be inserted into the cavity after injection of the cement and removal of the plug,

in which the pressure sensor is located in the sealing plate.

6. (Original) An instrument as claimed in claim 1, in which the pressure sensor generates a signal which is representative of the pressure to which the bone cement is subjected during displacement from the chamber, and in which the signal gives rise to an indication of the said pressure which is audible or visible.

7. (Currently amended) An instrument for deploying a bone cement material in a bone cavity, the material being formed from two reactive components which, when mixed, react to form a useable cement, the instrument comprising:

a. a chamber in which the components of the material can be mixed,
b. a mixing tool which extends into the chamber, and which can be manipulated from outside the chamber, to cause the components of the material to mix,

c. an outlet from the chamber through which the mixed material can be discharged from the chamber after it has mixed,

d. a piston which can be moved through the chamber to apply positive pressure to mixed material within the chamber, to displace the mixed material from the chamber through the outlet into the bone cavity,

e. a sealing component which fits over the bone cavity to seal the cavity around the chamber outlet and to minimise leakage of bone cement that has been injected into the cavity,

f. a sensor for measuring the pressure to which the bone cement is subjected during displacement from the chamber, the sensor being located in the sealing component,

in which the pressure sensor generates a signal which is representative of the pressure to which the bone cement is subjected during displacement from the chamber, and in which the signal gives rise to an indication of the said pressure which is audible or visible, and

in which the pressure sensor causes a warning signal to be generated when the pressure to which the bone cement is subjected during displacement from the chamber is less than about 3 kPa.

8. (Original) An instrument as claimed in claim 1, in which the pressure sensor generates a signal which is representative of the pressure to which the bone cement is subjected during displacement from the chamber, and in which the signal can be arranged to cause the pressure that is applied to the bone cement by the piston to be changed when the pressure is outside a pre-determined range.

9. (New) An instrument as claimed in claim 1, in which:
the sealing component defines a proximal opening, a distal opening, and a passage interposed therebetween,
the passage is configured to allow the mixed material to be advanced therethrough,
the sealing component includes a distal surface having the distal opening defined therein, and
the sensor is positioned at the distal surface of the sealing component.

10. (New) An instrument as claimed in claim 9, in which the sealing component further includes a proximal surface having the proximal opening defined therein.

11. (New) An instrument as claimed in claim 10, in which the outlet extends through said proximal opening.

12. (New) An instrument as claimed in claim 11, in which the outlet further extends through the distal opening.

13. (New) An instrument as claimed in claim 9, in which the outlet extends through the passage.

14. (New) An instrument as claimed in claim 1, in which:
the sealing component defines a passage configured to allow the mixed material to be advanced therethrough,
the passage has an end terminating in an opening,
the sealing component includes a surface having the opening defined therein, and
the sensor is positioned on the surface of the sealing component.

15. (New) An instrument as claimed in claim 14, in which the outlet extends through the passage.

16. (New) An instrument as claimed in claim 7, in which:

the sealing component defines a proximal opening, a distal opening, and a passage interposed therebetween,

the passage is configured to allow the mixed material to be advanced therethrough,

the sealing component includes a distal surface having the distal opening defined therein, and

the sensor is positioned at the distal surface of the sealing component.

17. (New) An instrument as claimed in claim 16, in which:

the sealing component further includes a proximal surface having the proximal opening defined therein, and

the outlet extends through said proximal opening.

18. (New) An instrument as claimed in claim 16, in which the outlet extends through the passage.

19. (New) An instrument as claimed in claim 7, in which:

the sealing component defines a passage configured to allow the mixed material to be advanced therethrough,

the passage has an end terminating in an opening,

the sealing component includes a surface having the opening defined therein, and

the sensor is positioned on the surface of the sealing component.

20. (New) An instrument as claimed in claim 19, in which the outlet extends through the passage.